

Listing of Claims

Claims 1–3 (Canceled)

4. (Currently amended) An array of metal clusters, comprising:
a substrate;
monodispersed, thiol-stabilized gold clusters having metal-cluster radiuses of from about 0.7 nm to about 1.8 nm; and
a polylysine scaffold having a lateral definition of about 10 Å coupled to the substrate, in predetermined patterns on the substrate; and the metal a plurality of gold clusters being coupled to the scaffold, the clusters having an interparticle spacing of less than about 5 nm.
~~and the scaffold being coupled to the substrate at predetermined positions.~~

5. (Currently amended) An array, comprising:
a substrate;
a polylysine scaffold coupled to the substrate; and
a plurality of gold clusters coupled to the scaffold with an interparticle separation of less than about 5 nm, the gold clusters having at least one thiol ligand coordinated thereto, and
the clusters having metal-cluster radiuses of from about 0.7 nm to about 1.8 nm.

6. (Previously presented) The array of claim 5, wherein the gold clusters are electrostatically coupled to the scaffold.

7. (Previously presented) The array of claim 5, wherein the thiol ligand comprises an aryl group, an alkyl group, or both.

9. (Previously presented) The array of claim 8, wherein the thiol ligand comprises an acidic group.

10. (Previously presented) The array of claim 9, wherein the acidic group is a carboxylic acid group.

11. (Currently amended) The array of claim 10, wherein the thiol ligand is selected from thiopropionic acid [[and]] or mercaptoundecanoic acid.

12. (Previously presented) The array of claim 5, wherein the substrate comprises silicon, silicon nitride, ultraflat glass, gold or a combination thereof.

13. (Previously presented) The array of claim 5, wherein the scaffold has a lateral definition of about 10 Å.

14. (New) The array of claim 4, wherein the interparticle separation between clusters is from about 1 nm to about 5 nm.

15. (New) The array of claim 5, wherein the interparticle separation between clusters is from about 1 nm to about 5 nm.